

## EUCALYPTUS CYANOPHYLLA, A NEW SPECIES FROM SOUTH AUSTRALIA AND VICTORIA

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### SUMMARY

BROOKER, M. I. H. (1977).—*Eucalyptus cyanophylla*, a new species from South Australia and Victoria. *Trans. R. Soc. S. Aust.* 101(1), 15-18, 28 February, 1977.

A new species of mallee eucalypt, belonging to series DUMOSAE, and distributed in the Murray Mallee region of South Australia and northwestern Victoria, is described and figured, and its affinities discussed.

### Description

*Eucalyptus cyanophylla* Brooker sp. nov.  
(SLE:H).<sup>1</sup> Figs 1-3.

*Eucalypto dumoso* A.Cunn. ex Schau. affinis a qua foliis latoribus et schistaciobus, alabastris et fructibus grossioribus, et florescentia differt.

Frutex "mallee" ad 6 m altus, cortice basin versus fibroso, supra laevi. Glandulae oleosae in medulla. Lignotuberum formans. Cotyledones reniformes. Folia plantulae petiolata, lanceolata vel ovata, 1-6 x 0.4-3 cm. Folia juvenilia petiolata, ovata, atroviridia, 7-12 x 4-7 cm. Folia adulta petiolata, lato-lanceolata, schistacea vel glauca, 10-16 x 2-3 cm. Inflorescentiae axillares 7(11)-florae. Pedunculi crassi, 0.5-1.2 cm longi. Alabastra breviter pedicellata vel subsessilia, 0.8-1.3 x 0.5-0.8 cm. Hypanthium cylindricum vel obconicum, rugosum vel costatum. Operculum hemisphaericum vel turbinatum, costatum. Filamenta in alabastro primum erecta demum inflexa. Antherae oblongae vel obovatae, sub-basifixae, versatiles, in rimis longitudinalibus dehiscentes. Loculi 4-5. Ovula verticaliter 4-seriata. Fructus cylindrica vel obconica, 0.7-1 x 0.7-0.9 cm, rugosa vel costata. Discus declivis. Valvae non-exsertae. Semina rufa, nitentia, reticulo non-profundo.

*Holotypus* ca. 3 km northeast of Berri, South Australia (34°15'S, 140°37'E) B. Copley 3799, 5.viii.1972 (AD). *Isotypus*: FRI.

A species with affinity to *E. dumosa* A. Cunn. ex Schau, but differing in the broader, bluer leaves, coarser buds and fruits, and in the flowering time (late summer-autumn for *E. dumosa*; winter-spring for *E. cyanophylla*).

A mallee to 6 m tall with grey-brown, fibrous bark towards the base, smooth above. Oil glands in pith. Capable of forming lignotubers.

*Cotyledones* reniform. Seedling leaves petiolate, lanceolate to ovate, 1-6 x 0.4-3 cm.

Juvenile leaves petiolate, ovate, dark green, 7-12 x 4-7 cm. Adult leaves petiolate, broad-lanceolate, bluish grey to glaucous, 10-16 x 2-3 cm.

*Inflorescences* axillary of 7(11) buds. Peduncles thick, 0.5-1.2 cm long. Buds shortly pedicellate to subsessile, 0.8-1.3 x 0.5-0.8 cm. Hypanthium cylindrical or obconical, rugose or ribbed. Operculum hemispherical or turbinate, ribbed. Filaments in bud at first erect then inflected. Anthers oblong to obovate, sub-basifixed, versatile, opening in longitudinal slits. Locules 4-5. Ovules in 4 vertical rows.

*Fruit* cylindrical or obconical, 0.7-1 x 0.7-0.9 cm, rugose or ribbed. Disc sloping inwards. Valves to rim level.

*Seed* red-brown, lustrous, with a shallow reticulum.

*Collections examined*: South Australia—Overland Corner, 2.xii.1913, J. B. Cleland (NSW); Alawoona, Dec. 1913, J. B. Cleland (AD); Morgan-Renmark, July 1914, W. Gill (NSW); Berri, Jan. 1921, J. B. Cleland (AD); Mindarie, 5.iv.1947, C. D. Boomsma (Woods & Forests Dept Adelaide, FRI); Berri, 20.x.1962, B. Dangerfield (AD); adjacent to northwest corner of Berri Irrigation Area, 11.x.1965, D. E. Symon 3789 (NSW); Winkie, Dalziel Rd, 23.xii.1967, B. Copley 1672 (AD, FRI); Renmark-Berri, 18.viii.1968, L. A. S. Johnson (NSW 47194); 20 km from Barmera towards Overland Corner, 27.viii.1968, M. E. Phillips (NSW); 1 km N of Alawoona, 6.vi.1970, G. W. Anderson (AD); Overland Corner, 13.vi.1970, A. G. Spooner (AD); Berri, July 1970, F. van der Sommen (FRI); 25.9 km E of Waikerie on road to Kingston, 3.iv.1975, M. I. H. Brooker 4905 (FRI, AD, MEL, NSW, PERTH); 24 km W of Karoonda, 24.vii.1975, F. van der Sommen (NSW).

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<sup>1</sup> Code derived from Pryor & Johnson (1971).



Fig. 1. *Eucalyptus cyanophylla* sp. nov. A—Seedling, x .9. B, C—Buds and fruits from type, x .9. D, E Buds and fruit from Berri, July 1970, F. van der Sommen, x .9. F—Adult leaves, x .6.

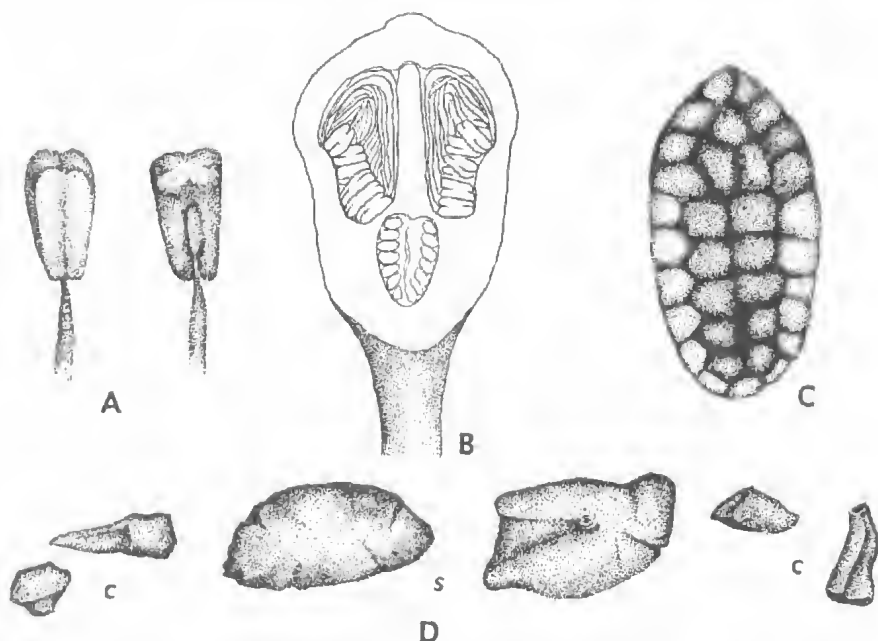


Fig. 2. *Eucalyptus cyanophylla* sp. nov. A—Anthers, x 15. B—Bud section, x 3. C—Ovules, x 14. D—Seed(s) and chaff (c), x 15.

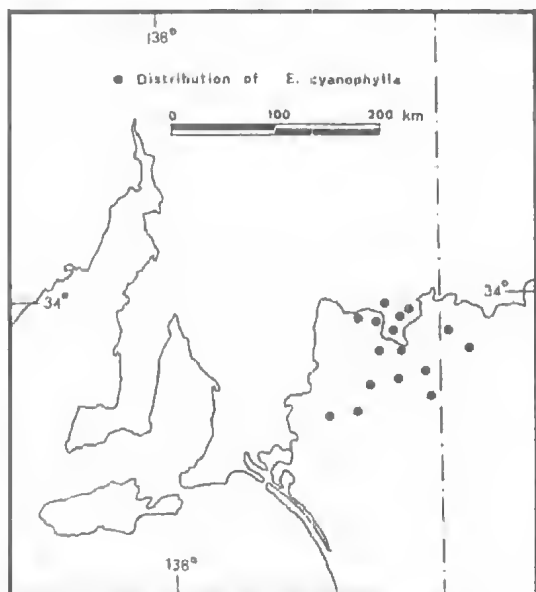


Fig. 3. Distribution of *Eucalyptus cyanophylla* sp. nov.

Victoria—6.4 km S of Meringur, Apr. 1971, H. Gorge (NSW); ca. 2 km E of state border between Renmark and Mildura, 3.iv.1975, M. I. H. Brooker 4904 (FRI, MEL., AD, NSW, K).

#### Discussion

*Eucalyptus cyanophylla* is the species of the Murray Mallee of South Australia and of

northwestern Victoria (Fig. 3) which has been incorrectly referred to as *E. pileata* Blakely by Burbidge (1947), Black (1952), and Willis (1972). The type of *E. pileata* is from Desmond, Western Australia and the typical form extends eastwards as far as southern and western Eyre Peninsula in South Australia. Related forms on Yorke Peninsula should be interpreted as intergrades between *E. pileata* to the west and *E. dumosa* and *E. anceps* (Maid.) Blakely to the east. *E. pileata* differs strikingly from *E. cyanophylla* in the narrower, bright green, glossy leaves which are often held more or less erect on the branchlets.

Both *E. pileata* and *E. cyanophylla* belong in the series DUMOSAE (Pryor & Johnson 1971) which is segregated in the proposed subgenus *Symphyomyrtus* by the association of several constant features, viz., reniform cotyledons; strict inflexion of the staminal filaments each of which bears fertile, versatile anthers; glandular pith; placentae with four vertical rows of ovular structures; and lustrous, reddish seed with a shallow reticulum. These characters have been discussed by Carr & Carr (1969) and Brooker (1971, 1972).

The species name is given for the conspicuously blue-grey leaves which distinguish it from *E. dumosa* and other mallees growing

near or within its area of distribution. Willis (1972) commented on the "silver aspect" of the trees so noticeable in the field.

My observations agree with those of Mr C. D. Boomsma (pers. comm.) that *E. dumosa* does not occur within the area of distribution although it overlaps along the margins as might be expected.

### Key

A revision of part of Black's Key (1952, pp. 616-617) for the South Australian species of the section DUMARIA (Pryor & Johnson 1971) is as follows:

CC.<sup>1</sup> Leaves alternate, thick and stiff.

DD. Seed reddish-brown, lustrous with a shallow reticulum.

EE. Buds and fruit quite sessile, hypanthium not wholly tapering if at all ... *E. conglobata*

EE. Buds and fruit subsessile to pedicellate, hypanthium tapering.

FF. Leaves green, more or less glossy.

GG. Buds and fruit more or less sessile, operculum conical to hemispherical, smooth or ribbed ..... *E. anceps*

GG. buds and fruit pedicellate, operculum beaked or hemispherical, usually prominently ribbed ..... *E. pileata*

FF. Leaves grey-green or bluish gray, dull.

HH. Leaves grey-green, 1-2 cm wide, Flowering in late summer and autumn ..... *E. dumosa*

HH. Leaves bluish grey 2-3 cm wide. Flowering in winter and spring ..... *E. cyanophylla*

DD. Seed grey and deeply pitted; or blackish-grey, more or less smooth on the dorsal side and with sharp ribs on the ventral side.

II. Seed grey and deeply pitted.

JJ. Operculum flattened-hemispherical, as wide or wider than the hypanthium, hypanthium not conspicuously ribbed ..... *E. concinna*

JJ. Operculum obtusely conical or hemispherical and pointed, rarely as wide as, usually narrower than the hypanthium, hypanthium obscurely or conspicuously ribbed.

KK. Fruit small, to 0.5 cm diameter, leaves narrow lanceolate ..... *E. brachycalyx*<sup>2</sup>

KK. Fruit larger, more than 0.6 cm diameter, leaves lanceolate ..... *E. rugosa*

II. Seed blackish-grey, more or less smooth on the dorsal side and with sharp ribs on the ventral side.

LL. Fruit barrel-shaped, 1.5-2 cm long, pedicellate, smooth or with shallow ribbing; fruiting peduncle reflexed or rarely erect ...

*E. pimpiniana*

LL: Fruit cylindrical or urceolate, 1-2 cm long, pedicellate or sessile, smooth, shallowly or coarsely ribbed; fruiting peduncle reflexed or erect.

MM. Fruit pedicellate, cylindrical or urceolate, 1-1.5 cm long, smooth or shallowly ribbed; fruiting peduncle erect or reflexed ..... *E. incrassata*<sup>3</sup>

MM. Fruit pedicellate or sessile, cylindrical, 1.5-2 cm long, coarsely ribbed; peduncle erect ..... *E. angulosa*

CC.<sup>1</sup> Leaves opposite, glaucous, mostly connate at base. .... *E. gamophylla*

<sup>1</sup> CC only, as in Black (1952).

<sup>2</sup> *E. brachycalyx* and *E. rugosa* are intergrading species. *E. rugosa* is usually coastal and is more robust in leaves, buds and fruit.

<sup>3</sup> *E. incrassata* and *E. angulosa* are intergrading species. *E. angulosa* is usually coastal and is more robust in leaves, buds and fruit.

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